

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

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**PAT. & T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES**

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte TOMOHIRO KAWATA  
and KUNIO MITOBE

Appeal No. 2004-0866  
Application No. 08/931,615

ON BRIEF

Before KIMLIN, PAK, and DELMENDO, Administrative Patent Judges.  
PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 2 through 9, 14 through 16 and 20 through 29, which are all of the claims pending in the above-identified application. Claims 17 and 30 were canceled subsequent to the final Office action dated November 25, 1998, Paper No. 6.

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According to appellants (Brief, pages 8-9):

Independent claims 4, 6, 20, and 25, and their dependent claims 2, 5, 7, 8, 14, 15, 16, 21, 22, 26, and 27 stand or fall together....

Independent claims 23 and 28, and their dependent claims 24 and 29, stand or fall together....

Dependent claims 3 and 9 stand or fall together.

However, the appellants do not separately argue the limitation of claim 23 in the manner required by 37 CFR § 1.192(c)(8)(2002). See, e.g., Brief, page 20. Rather, the appellants separately argue the limitations of claims 25 and 28 together. Thus, we grouped the claims on appeal as follows:

Group I - Independent claims 4, 6, 20 and 23 and their dependent claims;

Group II - Independent claims 25 and 28 and their dependent claims; and

Group III - Dependent claims 3 and 9.

In accordance with this grouping of the claims on appeal, we select claims 4, 28 and 3 as representative of the claims in Groups I, II and III, respectively and determine the propriety of the examiner's rejections based on these claims alone consistent with 37 CFR § 1.192(c)(7) and (c)(8). Claims 3, 4 and 28 are reproduced below:

3. The speaker unit according to claim 4, wherein the speaker unit is installed on either side of a television display on a television set.

4. A speaker unit comprising:  
an elliptical vibrating diaphragm;

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a cylindrical voice coil having a circular cross-section and secured at one end thereof on a center of the elliptical vibrating diaphragm;

a rectangular frame for movably supporting the vibrating diaphragm and having a through hole in its center;

a magnetic circuit formed by a top plate having a rectangular shape and having a through hole in its center, a plate-shaped magnet having a rectangular shape and having a circular through hole in its center, and a back plate having a rectangular shape and having an integrally formed upright pole on its center,

wherein each of the top plate, the plate-shaped magnet and the back plate has a width and a length, each width being substantially less than each respective length, thereby permitting installation of the speaker unit in a narrow space,

wherein the top plate, the plate-shaped magnet and the back plate each has a width that is equal to or narrower than a width of the rectangular frame in its shorter axis, and

wherein the top plate, the plate-shaped magnet and the back plate each has a length that is equal to or shorter than a length of the rectangular frame in its longer axis.

28. A speaker unit comprising:

an elliptical vibrating diaphragm;

a cylindrical voice coil having a circular cross-section and secured at one end thereof on a center of the elliptical vibrating diaphragm;

a rectangular frame having an elliptical recess portion for movably supporting the vibrating diaphragm and having a through hole in its center;

a magnetic circuit formed by a top plate having a rectangular shape and having a through hole in its center, a first plate-shaped magnet having a rectangular shape and having a circular through hole in its center, a back plate having a rectangular shape and

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having an upright pole on its center, and a second plate-shaped magnet on an opposite side of the back plate from the first plate-shaped magnet,

wherein each of the top plate, the plate-shaped magnet and the back plate has a width and a length, each width being substantially less than each respective length, thereby permitting installation of the speaker unit in a narrow space, and

wherein the top plate, the plate-shaped magnet and the back plate each has a width that is narrower than a width of the frame in its shorter axis.

The prior art references relied upon by the examiner are:

Sariti	3,079,472	Feb. 26, 1963
Nakamura	4,969,196	Nov. 6, 1990
Numa	55-118299	Sep. 11, 1980
(Published Japanese Patent Application)		
Lee et al. (Lee)	2 278 251 A	Nov. 23, 1994
(Published Great Britain Patent Application)		

Claims 2 through 4, 6, 8, 9, 15, 20 and 22 through 24 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Sariti and Nakamura. Claims 5, 7, 14, 16, 21 and 25 through 29 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Sariti, Nakamura and either Lee or Numa.

We have carefully reviewed the specification, claims and applied prior art references, including all of the arguments advanced by both the examiner and the appellants in support of their respective positions. This review has led us to conclude that the examiner's Section 103 rejections are well founded.

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Accordingly, for the reasons articulated in the Answer and below, we affirm the examiner's Section 103 rejections.

Under 35 U.S.C. 103, to establish a *prima facie* case of obviousness, there must be some objective teachings or suggestions in the applied prior art references and/or knowledge generally available to a person having ordinary skill in the art that would have led such person to arrive at the claimed subject matter. See generally *In re Oetiker*, 977 F.2d 1443, 1447-48, 24 USPQ2d 1443, 1446-47 (Fed. Cir. 1992) (Nies, J., concurring); *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). The knowledge generally available to a person having ordinary skill in the art includes the appellants' admission regarding what was known in the art at the time of the invention. See *In re Nomiya*, 509 F.2d 566, 570-71, 184 USPQ 607, 611-12 (CCPA 1975) (the admitted prior art in an applicant's specification may be used in determining the patentability of a claimed invention); see also *In re Davis*, 305 F.2d 501, 503, 134 USPQ 256, 258 (CCPA 1962).

With these precedents in mind, we turn to the examiner's Section 103 rejections. We find that substantial evidence supports the examiner's finding at page 3 of the Answer<sup>1</sup> that:

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<sup>1</sup> See also Sariti, column 2, line 23 to column 3, line 57,  
(continued...)

Sariti teaches a speaker unit which comprises a diaphragm (52), a cylindrical voice coil (50) secured on a center of the diaphragm, a rectangular frame (see the housing 48 in figures 1-2 and col. 2, lines 56-58), and a magnetic circuit formed by a rectangular top plate (12), a rectangular magnet (33) and a rectangular back plate (14) having an upright pole (24) on its center. As shown in figure 3, the upright pole (24) is formed as a unit with the back plate (also see attached the definition of the "integral").

Also, the appellants do not dispute the examiner's finding at page 3 of the Answer that:

As shown in figures 1-3, the top plate (12), the magnet (33) and the backplate (14), each has a width (figure 2) that is equal to a narrower than the width of the rectangular frame in its shorter axis. Also, the top plate (12), the magnet (33) and the backplate (14), each has a length (figure 3) that is equal to or shorter than the length of the rectangular frame in its longer axis.

In addition, Sariti shows the cylindrical voice coil (50) which has a circular cross section (see the circular openings 16, 34, and 20 in figure 1, and the air gap 30 in figure 2).

The examiner recognizes that Sariti does not expressly mention that its diaphragm is elliptical and its frame<sup>2</sup> supports such

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<sup>1</sup>(...continued)  
together with its Figures 1 and 2.

<sup>2</sup> Claims 4 and 28 do not require a rectangular housing. They only require a rectangular frame which is disclosed in  
(continued...)

diaphragm as required by claim 4. See the Answer, page 4. The examiner also recognizes that Sariti does not specifically mention using its speaker as part of a television set as required by claim 3. *Id.*

To remedy these deficiencies, the examiner takes official notice that "providing an oval or elliptical speaker is very well-known in the art" and "providing a speaker unit to be installed on either side of a television is very well-known in the art." *Id.* The appellants have not specifically traversed the official notice taken by the examiner. See the Brief in its entirety. In fact, the appellants acknowledge at page 1 of the specification that:

There has been known a thin type speaker unit which is for use in a television set and whose vibrating diaphragm is usually formed into an elliptical shape.

Implicit in this admission is that an elliptical vibrating diaphragm is known to be useful for forming a thin type speaker for a television set.<sup>3</sup>

Under these circumstances, we determine that one of ordinary skill in the art would have been led to modify the speaker unit of

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<sup>2</sup>(...continued)  
Sariti.

<sup>3</sup> We also observe than an elliptical shape diaphragm has a smaller width than a circular shape diaphragm of equal volume.

the type described in Sariti to have an elliptical shape diaphragm and a frame supporting thereof, motivated by a reasonable expectation of successfully forming a thinner speaker useful for a television set.<sup>4</sup>

The appellants argue that Sariti does not teach or would not have suggested a top plate, a plate-shaped magnet and a back plate each having a width and a length with "each width being substantially less than each respective length..." See the Brief in its entirety. We do not agree.

As found by the examiner (Answer, pages 3 and 4), Sariti teaches that "[t]he magnet 33 is formed in substantially the same shape as the front and back plates 12 and 14 which can be **rectangular**, circular or of any other desired shape (emphasis added)." See column 2, lines 56-59. The fact that Sariti's magnet, front plate and back plate can be rectangular indicates that they can have widths which are "substantially less" than their lengths. Thus, Sariti as a whole would have suggested employing a top plate, a plate-shape magnet and a back plate having a rectangular shape, i.e., widths which are substantially less than

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<sup>4</sup> We need not discuss the content of Nakamura as it is cumulative with respect to the teachings in the appellants' admission and the examiner's official notice.



lengths, in forming its speaker unit. In any event, one of ordinary skill in the art desiring to form a thinner speaker unit corresponding to the thinner rectangular speaker space on the sides of a television set would have been led to form a thinner rectangular speaker as opposed to a square speaker as alleged by the appellants. In other words, the shape and size of a speaker unit are dependent on the shape and size of the speaker space on the sides of a television set. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980) (mere optimization of a result effective variable is well within the ambit of one of ordinary skill in the art).

The appellants argue that Sarati does not teach or would not have suggested a back plate having an **integrally** formed upright pole on its center. See the Brief, page 16. We do not agree.

As indicated by the examiner (Answer, page 7), the broadest reasonable construction<sup>5</sup> of the term "integrally" does not preclude

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<sup>5</sup> During prosecuting of a patent application, the words in a claim are given the broadest reasonable interpretation in light of the specification. See *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). See also *In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978), citing *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 551 (CCPA 1969) ("We have consistently held that no 'applicant should have limitations of the specification read into a claim where no express statement of the limitation is included in the claim.'")

Sarati's back plate having attached on the center thereto an upright pole. According to page 628 of *Webster's Ninth New Collegiate Dictionary* (1990)<sup>6</sup>, the term "integrally" means "[forming] as a unit with another part." As shown by Figures 1 and 3 of Sariti, an upright pole is formed as a unit with a back plate.

Even were we to interpret "integrally" as requiring a single piece structure defining a back plate having an upright pole, our conclusion would not be changed. We determine that Sariti's teaching relating making an upright pole as part of a back plate would have suggested to employ them as either a single or two piece structure defining a back plate having an upright pole so long as they are properly attached for use in its speaker unit. This is especially true in this case since a back plate having an upright pole made of a single structure is well known as is apparent from Lee and Numa. See Lee, page 12 and Figures 11 and 12 and Numa, page 5 and Figure 6.

With respect to claim 28, the examiner finds that Lee and Numa teach that their driving portion of a speaker unit includes a front plate, a first magnet, an upside-down T-shape back plate and a second magnet. See Lee, pages 1, 2 and 12, Figures 1, 2 and 11 and

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<sup>6</sup> A copy of which is provided by the examiner.

Numa, page 5 and Figure 6. The second magnet is used as an auxiliary magnet and is located below the upside-down T-shape back plate. See, e.g., Lee, page 12. The presence of both the auxiliary magnet and the main magnet (first magnet) allows DC magnetic flux to interlink in the void between the front and back plates, thus causing current to flow along the voice coil to initiate the up-and down movement of the voice coil in conformity with a Fleming's rule of left hand. See, e.g., Lee, pages 3 and 13. Thus, notwithstanding the appellant's argument to the contrary at page 20 of the Brief, we concur with the examiner that one of ordinary skill in the art would have been led to employ a second plate-shape magnet, which shape is in conformity with Sariti's front and back plates, below the back plate (plate having an upright pole), to form the driving portion of the speaker unit of the type described in Sariti. As indicated *supra*, Sariti teaches that the magnet employed should be substantially the same shape as its front and back plates.

In view of the foregoing, we conclude that the examiner has established a *prima facie* case of obviousness regarding the claimed subject matter within the meaning of 35 U.S.C. § 103. Thus, the burden is shifted to the appellants to rebut the *prima facie* case established by the examiner. However, the appellants have not

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carried their burden. There is no factual evidence or data proffered by the appellants to show unobviousness of the claimed subject matter, e.g., the claimed elliptical diaphragm or the claimed combination of features imparts unexpected results over that of the closest prior art, i.e., Sariti. As such, we affirm the examiner's decision rejecting all of the appealed claims under 35 U.S.C. § 103.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

*Edward C. Kimlin*  
EDWARD C. KIMLIN  
Administrative Patent Judge

  
CHUNG K. PAK  
Administrative Patent Judge

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